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L4: Entry 2 of 5

File: USPT

Jun 23, 1998

DOCUMENT-IDENTIFIER: US 5770447 A

TITLE: Cell Line for the rapid expression of functional calcium channels

ABPL:

The instant invention provides a stable cell line, 34893 2L, for the rapid functional expression of high voltage activated calcium channels.

BSPR:

The voltage activated calcium channels of vertebrates have been shown to be involved in a variety of different physiological processes including muscle contraction, insulin release from the pancreas, and neurotransmitter release in the nervous system (Catterall W. A., Trends in Neurosciences, 1993;16:500-506; Catterall W., Epstein P. N., Diabetologia, 35(Suppl 2:S23-33) 1992; Birnbaumer L., et al., Neuron., 1994:13; Rorsman P., et al., Diabete. Metab., 1994;20:138-145). The original description of the calcium channels classed them as T type, L type, or N type. The T type channel is activated at relatively low voltages, while the L and N types are activated by depolarization to higher voltages. The L type is a channel that is involved in muscle contraction, and is characterized by slow inactivation and sensitivity to dihydropyridines. The N type is also a high voltage activated channel, but rather than being sensitive to dihydropyridines, the N channel is blocked by the peptide toxins GVIA and MVIIA from cone snails, and is involved in neurotransmitter release (Birnbaumer L., et al., Neuron., 1994:13; Olivera B. M., Miljanich G. P., Ramachandran J., Adams M. E., Annu Rev. Biochem., 1994;63:823-867).

BSPR:

The channels purified from neural tissue and skeletal muscle contain a number of different subunits. The L channel from skeletal muscle consists of a complex containing five subunits, alpha 1, alpha 2, beta, delta, and gamma. L channels isolated from neuronal tissue consist of three subunits corresponding to the alpha 1, alpha 2, and beta subunits. Delta and gamma do not seem to be expressed in the nervous system (Catterall W. A., Trends in Neurosciences, 1993;16:500-506).

BSPR:

The N type channel is expressed primarily in neuronal tissue, though there have been some reports of the channel being expressed in beta cells of the pancreas. The N channel is also

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| Term | Documents |
|---|-----------|
| ALPHA1 DWPI,TDBD,EPAB,JPAB,USPT. | 1004 |
| ALPHA1S | 0 |
| ALPHA DWPI,TDBD,EPAB,JPAB,USPT. | 450654 |
| ALPHAS DWPI,TDBD,EPAB,JPAB,USPT. | 311 |
| "1" DWPI,TDBD,EPAB,JPAB,USPT. | 15934045 |
| 1S DWPI,TDBD,EPAB,JPAB,USPT. | 10580 |
| ALPHA-1 DWPI,TDBD,EPAB,JPAB,USPT. | 1546 |
| ALPHA-1S | 0 |
| (2 AND ((ALPHA1 OR ALPHA-1) OR (ALPHA ADJ "1"))). USPT,JPAB,EPAB,DWPI,TDBD. | 5 |

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| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KUMC | Draw Desc | Clip Img | Image |
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US-PAT-NO: 5770447

DOCUMENT-IDENTIFIER: US 5770447 A

TITLE: Cell Line for the rapid expression of functional calcium channels

DATE-ISSUED: June 23, 1998

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------------|-----------|-------|----------|---------|
| Offord; James David | Ann Arbor | MI | N/A | N/A |

US-CL-CURRENT: 435/369; 435/7.1, 435/7.21

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|
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☐ 3. Document ID: US 5712158 A

L4: Entry 3 of 5

File: USPT

Jan 27, 1998

US-PAT-NO: 5712158

DOCUMENT-IDENTIFIER: US 5712158 A

TITLE: Cell line for the rapid expression of functional calcium channels

DATE-ISSUED: January 27, 1998

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------------|-----------|-------|----------|---------|
| Offord; James David | Ann Arbor | MI | N/A | N/A |

US-CL-CURRENT: 435/369; 435/69.1

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|
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☐ 4. Document ID: AU 9960217 A, WO 200015845 A1

L4: Entry 4 of 5

File: DWPI

Apr 3, 2000